However, the way the claims are now structured, they all clearly distinguish from Examiner's proposed combination of Miller and Anderson in that each of the claims now expressly defines a situation wherein the claimed combination may be powered from an AC voltage as well as, alternatively, from a DC voltage.

In Miller's arrangement, a DC voltage may not be used to power his lamp holder fitting for the reason that a transformer (his element 9) is interposed between the AC power line input and his oscillator (element 18); and, as is well known to a person of ordinary skill in the art pertinent hereto, a transformer can not be used for transforming a DC voltage.

On the other hand, again as a person possessing ordinary skill in the art pertinent hereto would readily understand, the arrangement defined by Applicant in his specification may inherently be powered equally well from a DC voltage as from an AC voltage. This is so for the reason that the frequency-converting power supply referred-to as element 16 in Applicant's screw-in lamp unit (his Fig. 1) is connected with the lamp unit's power input terminals by way of a bridge rectifier means -- without any interposed transformer. (As indicated in the last paragraph on page 6 of the specification, element 16 comprises the circuit arrangement illustrated by Applicant's Fig. 2; which circuit arrangement does indeed, by way of element 27, comprise a bridge rectifier means.)

Claims 18-22 clearly distinguish over Miller and Anderson, inter alia, by way of the defined inverter current and voltage waveforms.

CONCLUDING REMARKS

On pages 3-5 of his Amendment B, under the heading of In re All 102/103 Rejections, Applicant presented a set of arguments relating to the need for Examiner to provide evidence of non-patentability before he could properly reject Applicant's claims. Examiner did not respond to those arguments, except to say that they were rendered moot because of the new grounds of rejection.

However, these arguments were in fact not rendered moot by the new grounds of rejection; and, by reference, Applicant herewith re-applies all the arguments presented on pages 3-5 in Amendment B under the heading of In re All 102/103 Rejections.

In particular, in accordance with ordinary rules of evidence, before Examiner may properly deny Applicant a patent for his invention, Examiner must provide clear and convincing evidence to the effect that the claimed invention in not patentable, either on account of having been invented by someone else prior to Applicant's priority date, or on account of constituting subject matter that would have been obvious to a person having ordinary skill in the pertinent art prior to Applicant's priority date. Otherwise, in accordance with paragraphs 102 and 102 of the Patent Law, Applicant is plainly entitled to a patent for his claimed invention.

In other words, according to the Patent Law and conventional rules of evidence, it is the duty of the PTO to provide clear and convincing prima facie evidence of non-patentability; it is not the duty of Applicant to provide evidence of patentability.

Ole K. Nilssen, Pro Se Applicant

312-658-5615

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Amended Claims in Serial No. 07/020,478

1. (Twice Amended) An arrangement comprising:

gas discharge lamp means having lamp terminals;

frequency-converting power supply and ballasting means having input terminals and output terminals, the output terminals being: (i) connected with the lamp terminals, and (ii) operative, whenever either an AC voltage or a DC voltage of magnitude about equal to that of an ordinary power line voltage is applied to the input terminals, to provide operating voltage to the lamp terminals, the frequency of the operating voltage being different from that of the ordinary power line voltage; and

base means operative to rigidly and non-detachably hold together the lamp means and the frequency-converting power supply and ballasting means, thereby to form an integral lamp unit, the base means having: (i) a screw base operative to be screwed into and held by an ordinary Edison-type lamp socket, the lamp socket having socket electrodes, and (ii) electrode means connected with the input terminals and operative, after the base means having been screwed into the Edison-type lamp socket, to make contact with the socket electrodes.

2. (Twice Amended) An arrangement comprising:

gas discharge lamp means having lamp terminals, which, for optimally effective lamp operation, must be supplied with an operating voltage of frequency different from that of the power line voltage normally present on an ordinary electric utility power line;

frequency-converting power supply and ballasting means having input terminals and output terminals, the output terminals being connected with the lamp terminals and being operative, whenever either an AC voltage or a DC voltage of magnitude about equal to that of ordinary power line voltage is applied to the input terminals, to provide the operating voltage thereto; and

base means operative to rigidly and non-detachably hold together the lamp means and the frequency-converting power supply and ballasting means, thereby to form an integral lamp unit, the base means having: (i) a screw base operative to be screwed into and held by an ordinary Edison-type lamp socket, the lamp socket having socket electrodes, and (ii) electrode means connected with the input terminals and operative, after the base means having been screwed into the Edison-type lamp socket, to make contact with the socket electrodes.

3. (Twice Amended) An arrangement comprising:

gas discharge lamp means having lamp terminals;

rectifier means having AC input terminals and DC output terminals, a DC voltage being supplied at the DC output terminals in response to the provision at the AC input terminals of either an AC voltage or a DC voltage of magnitude about equal to that of the power line voltage normally present on an ordinary electric utility power line;

inverter means connected with the DC output terminals and operative to provide a high-frequency output voltage at a set of high-frequency output terminals, the frequency of the high-frequency output voltage being substantially higher than that of the power line voltage present on an ordinary electric utility power line;

L-C tank circuit means connected with the high-frequency output terminals and operative to resonantly interact with the high-frequency output voltage provided thereat, the L-C tank circuit having a tank inductor and a tank capacitor, the gas discharge lamp means being effectively connected in parallel with the tank capacitor; and

base means operative to hold together the gas discharge lamp means, the rectifier means, the inverter means and the L-C tank circuit means, thereby to form an integral lamp unit having no detachable parts, the base means having: (i) a screw base operative to be screwed into and to be held by an ordinary Edison-type lamp socket, the lamp socket having socket electrodes at which is sometimes provided the power line voltage present on an ordinary electric utility power line, and (ii) electrode means connected with the AC input terminals and operative, after the base means having been screwed into the Edison-type lamp socket, to make contact with the socket electrodes;

whereby the lamp unit can be screwed into and be held by an ordinary Edison-type lamp socket, thereby to be properly powered from the power line voltage sometimes provided at the socket electrodes thereof.

4. The arrangement of claim 3 wherein: (i) the L-C tank circuit comprises a series-combination of an inductor and a capacitor, and (ii) this series-combination is series-resonant at or near the frequency of the high-frequency output voltage.

5 6. (Twice Amended) An arrangement comprising:

power supply means having input terminals and output terminals, an AC output voltage being provided at the output terminals whenever the input terminals are provided with either an AC or a DC voltage of magnitude about equal to the [a] power line voltage [such as that] normally present at an ordinary electric utility power line;

a series-combination of an inductor and a capacitor connected across the output terminals and constituted such as to exhibit series-resonant action at or near the fundamental frequency of the AC output voltage;

gas discharge lamp means having a set of lamp terminals connected in parallel circuit with the capacitor, thereby to constitute a load as well as an over-load protection means for the series-resonant series-combination; and

base means operative to non-detachably hold together the power supply means, the series-combination, and the gas discharge lamp means, thereby to form an integral lamp unit, the base means having: (i) a screw base operative to be screwed into and to be held by an ordinary Edison-type lamp socket, the lamp socket having socket electrodes at which is sometimes provided the power line voltage from an ordinary electric utility power line, and (ii) electrode means connected with the input terminals and operative, after the base means having been screwed into the Edison-type lamp socket, to make contact with the socket electrodes;

such that the lamp unit can be screwed into and be held by an ordinary Edison-type lamp socket, thereby to be properly powered from the power line voltage sometimes provided at the socket electrodes thereof.

6 5
7. The arrangement of claim 6 wherein the power supply means comprises:

rectifier means connected with the input terminals and operative, whenever the power line voltage is supplied thereto, to provide a DC voltage at a center-tapped DC output;

half-bridge inverter means connected between the center-tapped DC output and the output terminals, the half-bridge inverter means being operative to convert the DC voltage to the AC output voltage.

7 5
8. The arrangement of claim 6 wherein the AC output voltage is characterized as having a fundamental frequency that is different from that of the power line voltage.

8 8. The arrangement of claim 1 wherein the frequency converting power supply and ballasting means comprises: (i) rectifier means connected with the input terminals and operative to provide a DC voltage at a set of DC terminals, and (ii) inverter means connected with the DC terminals and operative to provide to the output terminals a current of substantially sinusoidal waveshape.

9 ~~10~~. The arrangement of claim 1 wherein the frequency converting power supply and ballasting means comprises: (i) rectifier means connected with the input terminals and operative to provide a DC voltage at a set of DC terminals, and (ii) inverter means connected with the DC terminals and operative to provide to the output terminals a voltage of substantially sinusoidal waveshape.

C3 Cont

10 ~~11~~. The arrangement of claim 1 wherein the frequency converting power supply and ballasting means comprises: (i) rectifier means connected with the input terminals and operative to provide a DC voltage at a set of DC terminals, and (ii) inverter means connected with the DC terminals and operative to provide to the output terminals a voltage suitable for starting and operating the gas discharge lamp, the inverter means having a pair of transistors series-connected across the DC terminals.

11 ~~12~~. The arrangement of claim 1 wherein the frequency converting power supply and ballasting means comprises: (i) rectifier means connected with the input terminals and operative to provide a DC voltage at a set of DC terminals, and (ii) inverter means connected with the DC terminals and operative to provide to the output terminals a voltage suitable for starting and operating the gas discharge lamp, the inverter means having transistor means operative to oscillate by way of positive feedback administered by way of saturable inductor means.

12 ~~13~~. The arrangement of claim 5 ~~6~~ wherein an AC load voltage is present across the capacitor, which AC load voltage is of substantially sinusoidal waveshape.

13. ~~14~~. The arrangement of claim 5 ~~6~~ wherein the AC output voltage may reasonably be characterized as being a squarewave voltage.

C3 Concl

14. ~~13~~. The arrangement of claim 6 ~~7~~ wherein the half-bridge inverter means is made to oscillate by way of positive feedback administered by way of a saturable inductor means.

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15. ~~16~~. A screw-in lamp unit comprising:

P1

gas discharge lamp means having lamp terminals;

frequency-converting ballasting means having input terminals and output terminals; the output terminals being: (i) connected with the lamp terminals; and (i) operative, whenever an AC voltage or, alternatively, a DC voltage of magnitude about equal to that of the power line voltage normally present at an ordinary electric utility power line is applied to the input terminals, to provide operating voltage to the lamp terminals; the frequency of the operating voltage being different from that of the power line voltage; the waveshape of the operating voltage being substantially sinusoidal; and

C4-1 Conx

screw base means operative to hold together the lamp means and the frequency-converting ballasting means, thereby to form the screw-in lamp unit; the screw base means having: (i) a screw base operative to be screwed into and held by an ordinary Edison-type lamp socket, the lamp socket having socket electrodes; and (ii) electrode means connected with the input terminals and operative, after the screw base means having been screwed into the Edison-type lamp socket, to make contact with the socket electrodes;

whereby the screw-in lamp unit is operative to be properly powered from: (i) the power line voltage present on an ordinary electric utility power line; and (ii) alternatively, from a DC voltage of magnitude about equal to that of this power line voltage.

16. ~~17~~. The screw-in lamp unit of claim 15 ~~16~~ wherein:

the frequency of the operating voltage is substantially higher than that of the power line voltage; and

the frequency-converting power supply includes: (i) inverter means connected in circuit with the input terminals and operative to provide a high-frequency inverter voltage at a set of inverter terminals; and (ii) tuned L-C circuit resonant at or near the fundamental frequency of the high-frequency inverter voltage, the tuned L-C circuit being connected between the inverter terminals and the output terminals.

17.

~~18~~. A combination comprising:

gas discharge lamp means having lamp terminals;

rectifier means having power input terminals and DC output terminals; an output DC voltage being supplied at the DC output terminals in response to the provision at the power input terminals of an input AC voltage or, alternatively, an input DC voltage of magnitude about equal to that of the power line voltage normally present on an ordinary electric utility power line;

inverter means connected with the DC output terminals and operative to provide a high-frequency output current from a set of high-frequency output terminals; the inverter means including a transistor operative to conduct current in response to a control voltage provided at a control input; the frequency of the high-frequency output current being substantially higher than that of the power line voltage present on an ordinary electric utility power line; and

L-C circuit means connected in circuit between the high-frequency output terminals and the lamp terminals; the L-C circuit means being operative to cause a sinusoidal high-frequency voltage to be present across the lamp terminals; the high-frequency voltage having a cycle period;

the combination being so arranged as to cause the transistor to conduct current for a brief span of time once during each cycle period of the high-frequency voltage; the duration of the brief span of time being about equal to or shorter than one quarter of the cycle period.

18 17
~~19~~. The combination of claim ~~18~~ wherein: (i) the L-C circuit means includes a tank-capacitor and a tank-inductor effectively series-connected across the high-frequency output terminals; (ii) the tank-inductor and tank-capacitor being operative to resonantly interact at the frequency of the high-frequency output current; and (iii) the lamp terminals are effectively connected in parallel with the tank-capacitor.

19 17
20. The combination of claim ~~18~~ arranged to be integrated with a screw-in lamp base having base terminals, thereby to form a screw-in lamp unit; the base terminals being connected with the power input terminals.

20
~~21.~~ A combination comprising:

gas discharge lamp means having lamp terminals;

rectifier means having power input terminals and DC output terminals; an output DC voltage being supplied at the DC output terminals in response to the provision at the power input terminals of an input AC voltage or, alternatively, an input DC voltage of magnitude about equal to that of the power line voltage normally present on an ordinary electric utility power line;

inverter means connected with the DC output terminals and operative to provide a high-frequency output current from a set of high-frequency output terminals; the inverter means including a transistor operative to conduct current in response to a control voltage provided at a control input; the frequency of the high-frequency output current being substantially higher than that of the power line voltage present on an ordinary electric utility power line; and

L-C means connected in circuit between the high-frequency output terminals and the lamp terminals; the L-C means having a tank-inductor and a tank-capacitor; the L-C means being operative to cause a first substantially sinusoidal high-frequency voltage to be present across the tank-capacitor; the lamp terminals being effectively connected in parallel with the tank-capacitor, thereby to cause a second substantially sinusoidal high-frequency voltage to be provided across the lamp terminals; the first and the second high-frequency voltage being approximately of the same frequency, phase and period;

the combination being so arranged as to cause the transistor to conduct current for a brief span of time once during each period; the duration of the brief span of time being shorter than half that of the period.

21. 20
~~22.~~ The combination of claim ~~21~~ wherein the tank-inductor and the tank-capacitor are: (i) effectively series-connected across the high-frequency output terminals; and (ii) operative to resonantly interact at the frequency of the high-frequency output current.